

**CLAIMS**

1. Production process for parts by Reaction Injection Moulding, **characterized** in that it is performed a dynamic pressure measurement, for the determination of the pulsation - both in frequency and in amplitude - to which the mixing and reaction pulsation regime is subjected to, and subsequently is detected the flow regime within the mixing and reaction chamber (1).
2. Process according to claim 1, **characterized** in that the dynamic pressure measure is made upstream of the injectors (2, 3).
3. Process according to claim 2, **characterized** in that the dynamic pressure measure is made using a differential pressure transducer (5), with pressure taps located upstream of the injectors (2, 3).
4. Production process for parts by Reaction Injection Moulding, **characterized** in that it is artificially introduced a pulsation, with given frequency and amplitude, imposed on the jets of the injectors (2, 3).
5. Process according to claim 4, **characterized** in that the artificially introduced pulsation is of frequency multiple or sub-multiple of the natural frequency.
6. Process according to any of claims 1 to 3 and any of claims 4 to 5, **characterized** in that a pulsation is artificially introduced in the jets of the injectors (2, 3) and in that in those jets it is performed a measurement of the pulsation resulting on the

combination of the artificially introduced pulsation and the natural pulsation resulting directly from the mixing and reaction regime.

7. Process according to claim 6, **characterized** in that the artificially introduced pulsation is automatically adjusted, in frequency and/or in amplitude, as a function of the dynamic pressure measurement.
8. Device for the production of parts by Reaction Injection Moulding, for the implementation of the process in Claim 1, including a mixing and reaction chamber (1) and at least two opposing injectors (2, 3), **characterized** in that it comprises means (5) for the dynamic pressure measurement.
9. Device for the production of parts by Reaction Injection Moulding for the implementation of the process in claim 4, including a mixing and reaction chamber (1) and at least two opposing injectors (2, 3), **characterized** in that it comprises means (6) for the introduction of a given frequency and amplitude imposed on the jets of the injectors (2, 3).
10. Device according to claims 8 and 9, **characterized** in that the means (6) for the introduction of an artificial pulsation, with a given imposed frequency and amplitude, are affected by the results of the dynamic pressure measurement, made by means (5).
11. Device according to claims 8 to 10, **characterized** in that it comprises a prismatic rectangular mixing and reaction chamber (1) and rectangular opposing injectors (2, 3) extending through the whole width of

the corresponding face of the prism, and in that the aperture,  $d_1$ , of the injectors is regulated and/or fixed in order to equalize the opposing jets kinetic energy.

12. Device according to any of claims 8 to 10, **characterized** in that it comprises a cylindrical mixing and reaction chamber (1) and elongated opposing injectors (2, 3) with the same size  $d_2$  normal to the axis of the chamber (1) and with aperture  $d_1$  regulated and/or fixed in order to equalize the opposing jets kinetic energy.
13. Device according to any of claims 8 to 12, **characterized** in that one of the feed streams is injected by an additional injector (4) in the opposing jets impact region.
14. Device according to claim 13, **characterized** in that the additional injector (4) is substantially axial to the chamber (1).